

FORM PTO-1449
(Rev. 2-32)U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICEATTY. DOCKET NO:
MDO-2471-U-D1SERIAL NO.:
09/243,237CONFIRMATION NO.
2221INFORMATION DISCLOSURE
CITATION IN AN APPLICATIONAPPLICANT:
MUKHOPADHYAY, Debasish

Use several sheets if necessary)

APPLICATION FILING
DATE:
02/02/99GROUP:
1723

U.S. PATENT DOCUMENTS

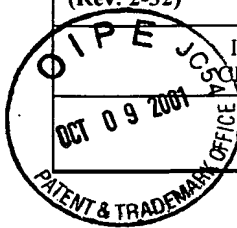
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
AK	*	3,721,621	03/1973	Hough	210	22	
	*	3,870,033	03/1975	Faylor, et al	426	360R	
	*	3,953,580	04/1976	Allen, et al	423	283	
	*	3,964,999	06/1976	Chisdes	210	23R	
	*	3,985,648	10/1976	Casolo	210	27	
	*	4,182,676	10/1980	Casolo	210	27	
	*	4,235,715	11/1980	Wiegert	210	670	
	*	4,321,145	03/1982	Carlson	210	678	
	*	4,430,226	02/1984	Hegde, et al	210	638	
	*	4,532,045	07/1985	Littmann	210	668	
	*	4,532,047	07/1985	Dubin	210	698	
	*	4,548,716	10/1985	Boeve	210	652	
	*	4,574,049	03/1986	Pittner	210	639	
	*	4,698,153	10/1987	Matsuzaki, et al	210	192	
	*	4,755,298	07/1988	Grinstead	210	638	
	*	4,820,421	04/1989	Auerswald	210	670	
	*	4,824,574	04/1989	Cadotte, et al	210	654	
	*	4,900,450	02/1990	Schmidt	210	679	
	*	4,917,806	04/1990	Matsunaga, et al	210	662	
	*	4,969,520	11/1990	Jan, et al	166	266	
	*	4,995,983	02/1991	Eadie, et al	210	639	
	*	5,028,336	07/1991	Bartels, et al	210	639	
	*	5,061,374	10/1991	Lewis	210	638	
	*	5,073,268	12/1991	Saito, et al	210	638	
AK	*	5,174,901	12/1992	Smith	210	652	

EXAMINER

DATE CONSIDERED

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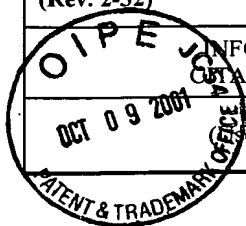
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U.S. PATENT DOCUMENTS							
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
AK	*	5,236,722	08/1993	Schroeder	426	67	
	*	5,246,586	09/1993	Ban, et al	210	638	
	*	5,250,185	10/1993	Tao, et al	210	654	
	*	5,266,203	11/1993	Mukhopadhyay, et al	210	638	
	*	5,292,439	03/1994	Morita, et al	210	638	
	*	5,338,456	08/1994	Stivers	210	652	
	*	5,358,640	10/1994	Zeiher, et al	210	639	
	*	5,385,664	01/1995	Oinuma, et al	210	151	
	*	5,476,591	12/1995	Green	210	638	
	*	5,529,689	06/1996	Korin	210	232	
	*	5,571,419	11/1996	Obata, et al	210	664	
	*	5,573,662	11/1996	Abe	210	188	
	*	5,573,666	11/1996	Korin	210	232	
	*	5,645,727	07/97	Bhave, et al	210	651	
	*	5,670,053	09/1997	Collentro, et al	210	652	
	*	5,695,643	12/1997	Brandt, et al	210	652	
	*	5,766,479	06/1998	Collentro, et al	210	639	
	*	5,925,255	07/1999	Mukhopadhyay	210	652	
AK	①	6,267,891 B1	07/2001	Tonelli, et al	210	652	

EXAMINER	<i>A. P. ...</i>	DATE CONSIDERED	<i>10/21/01</i>
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FOREIGN PATENT DOCUMENTS								
							TRANSLATION	
		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	YES	NO
AK	2	DE-1792304-A2	03/1972	Germany				x
	3	JP-50-75987-A2	06/1975	Japan				x
	4	DE-2607737-A2	09/1976	Germany				x
	5	JP-55-012284-B1	04/1980	Japan ++			x	
	6	JP-59-112890-A2 ✓	06/1984	Japan			x(2)	
	7	JP-62-204892-A2	09/1987	Japan			x	
	8	JP-62-294484-A2 ✓	12/1987	Japan			x	
	9	JP-02-207888-A2	08/1990	Japan			x	
	10	JP-02-227185-A2	09/1990	Japan			x	
	11	JP-05-012040-B2	02/1993	Japan				x
	12	JP-05-269463-A2 ✓	10/1993	Japan				x
	13	JP-06-049191-B2	06/1994	Japan			x	
J	14	JP-08-029315-B2	03/1996	Japan			x	
AK	15	DE-19603494-C2	02/1998	Germany +			x	

NOTES:

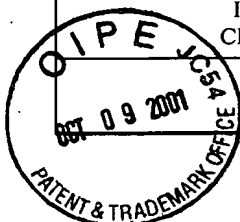
+ = A2 document (not obtained) published 08/1997, per face sheet of C2 document.

++ = Disclosed as JP-50-088017-A2, KOKAI, in previous related U.S. case, now U.S. Patent 5,925,225.

JAPANA2 = KOKAI (KOKAI TOKKYO KOHO)
(a publication of unexamined patent application)B2 = TOKKYO KOHO
(a publication of examined patent application)GERMANYA2 = Offenlegungsschrift - (unexamined patent application)
C2 = patentschrift - (examined patent)

EXAMINER	<i>A. Platten</i>	DATE CONSIDERED	<i>10/24/01</i>
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OTHER DOCUMENTS(Including Author, Title, Date, Pertinent Pages, etc.)

AF		16	JP-50-75987-A2 (06/1975) - Derwent Abstract of KOKAI
		17	DE-1792304-B (08/1975) - Derwent Abstract to issued patent
		18	DE-2607737-A1 (09/1976) - Derwent Abstract to unexamined patent application
		19	JP-53-004777-A2 (01/1978) - KOKAI Abstract (Patolis)
		20	JP-54-069579-A2 - (06/1979) -KOKAI Abstract (Patolis)
		21	JP-54-083688-A2 (07/1979) - KOKAI Abstract (Patolis)
		22	JP-56-139106-A2 (10/1981) - KOKAI Abstract (Patolis)
		23	JP-58-118538-A2 (07/1983) - Dialog Abstract of KOKAI
		24	JP-58-122084-A2 (07/1983) - KOKAI Abstract (Patolis)
		25	JP-59-112890-A2 (06/1984) - Patent Abstracts of Japan, Vol. 008, No. 232 (C-248) 25 October 1984 (1984-10-25)
		26	JP-59-112890-A2 (06/1984) - Abstract - Figures - Tables, Derwent Publications Ltd., London, GB, AN 1984-19809, XP002147898
		27	JP-59-112890-A2 (06/1984) - Chemical Abstracts, Vol. 101, No. 22, 26 November 1984 (1984-11-26), Columbus, Ohio, US, Abstract No. 19754, XP002147895
		28	JP-62-110795-A2 (06/1987) - Patent Abstracts of Japan, Published: 21 May 1987
AF		29	JP-62-110795-A2 (05/1987) - Delphion Abstract; Publication Date: 21 May 1987

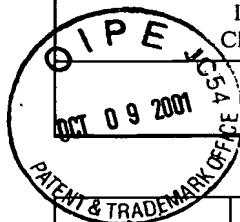
EXAMINER	<i>A. D. Barton</i>	DATE CONSIDERED	<i>10/21/01</i>
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AF 1 ~ AF	30	JP-62-294484-A2 (12/1987) - Patent Abstracts of Japan, Vol. 012, No. 191, (C-501) 3 June 1988
	31	JP-62-294484-A2 (12/1987) - Patent Abstracts of Japan (Application No. 61138486)
	31	JP-62-294484-A2 (12/1987) - Delphion Abstract; Publication Date: 21 December 1987
	33	JP-62-294484-A2 (12/1987) - Abstract - Tables, Derwent Publications Ltd., London GB, AN 1988-033867, XP002147896
	34	JP-62-294484-A2 (12/1987) - Chemical Abstracts, Vol. 108, No. 20, 16 May 1988, Columbus, Ohio, U.S., Abstract No. 173328, XP002147894
	35	JP-63-028486-A2 (02/1988) - Application No. 6117235 - Patent Abstracts of Japan, Published: 06 February 1988
	35	JP-63-028486-A2 (02/1988) - Delphion Abstract; Publication Date: 06 February 1988
	37	JP-02-052088-A2 (02/1990) - Patent Abstracts of Japan; Publication Date: 21 February 1990
	38	JP-02-052088-A2 (02/1990) - Patent Abstracts of Japan
	37	JP-02-052088-A2 (02/1990) - Delphion Abstract, Publication Date: 21 February 1990
	40	JP-02-227185-A2 (09/1990) - Patent Abstracts of Japan; Publication Date: 10 September 1990
	41	JP-02-227185-A2 (09/1990) - DialogIP Document Abstract
	42	JP-02-227185-A2 (09/1990) - Delphion Abstract; Publication Date: 10 September 1990
	43	JP-02-227185-A2 (09/1990) - Issued 10 September 1990 - Derwent Abstract

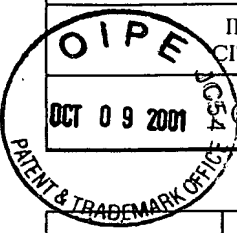
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AK		44	JP-04-118004-A2 (04/1992) - Patent Abstract of Japan, 20 April 1992, Application No. 02235899
		45	JP-05-012040-B4 (02/1993) - Issued: 17 February 1993 (INPADOC Abstract Record)
		46	JP-05-269463-A2 (10/1993) - Patent Abstracts of Japan, Vol. 018, No. 043, (C-1156) 24 January 1994
		47	JP-05-269463-A2 (10/1993) - Abstract - Derwent Publications Ltd., London GB, AN 1993-364476, XP002147897
		48	Practical Ion Exchange, January 1, 1972, Akimitsu Miyahara, et al; published by Kagaku Kogyo Ltd., (pages 99-102)
	*		Larson, R.E., et al., "Development of the FT-30 Thin-Film Composite Membrane," National Water Supply Improvement Association 9th Annual Conference and International Trade Fair, May 31- June 4, 1981.
	*		Lee, Eric, K.L., "Novel Composite Membranes," April, 1983.
	*		Nakamura, Tadashi, "Seawater Desalination by Reverse Osmosis Process, "July/August, 1981.
	*		Crabbe, Daniel C.M., "A Double Pass Reverse Osmosis System, " September, 1976
	*		Crabbe, Daniel C.M., "A Double Pass Reverse Osmosis System", Industrial Water Engineering - December 1976/January 1977
	*		Cadotte, J., "Evolution of Composite Reverse Osmosis Membranes," 1984.
	*		1982 Report on Technological Development for Boiler Water by Reverse Osmosis, Exhibit Ko. No. 1., March, 1983, Fresh Water Generation Promotion Center, pp. 1-11, 45-97
	*		Handbook of Water Purification, Editor Walter Lorch - London, MacGraw-Hill Cop. 1981, XVIII, 715 p. III.
	*		Permasep Products Engineering Manual, E.I., du Pont de Nemours & Co., 1982.
AK	*		Applications for High-Purity-Water Production, Edited by Bipin S. Parekh, 1988.

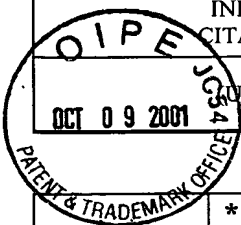
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AF	*		Development of FT-30 Membranes in Spiral Wound Modules, October 1982
	*		Handbook of Membrane Technology, pp. 184-198, July 15, 1985.
	*		Annual Research Report No. 42, Shikoku Electric Power Co., Ltd., September 1983
	*		Zosui Gijutsu, Water Producing Technology, Vol. 10, No. 2, pp. 13-22, 1984
	*		FT30 Membrane Description, Technical Bulletin, December, 1992
	*		Description of the FT-30 Membrane, 1992
	*		Milstead, C.E. et al, "Rejection of Carbon Dioxide and pH Effects In Reverse Osmosis Desalination." Desalination (1971), pp. 217-223
	*		Petersen, R.J., et al, "Industrial Applications of the FT-30 Reverse Osmosis Membrane." World Filtration Congress III, 1989, pp. 541-547.
			⁴⁹ Filmtec Membranes, Membrane System Design Guidelines (Dow) Published March 1996
	*		Peterson, R.J., et al, "Development of the FT-30 Thin-Film Composite Membrane for Desalting Applications," July 6-10, 1980.
AF	*		Parks, C.S., et al., "Fundamentals of Ion Exchange In Water Treatment", Presented at the 7th Annual Liberty Bell Corrosion Conference, 1969
	*		Reverse Osmosis Element Warranty, FilmTec Corporation, Pub. DATE?
AF	*		Larson, R.E., "The FT-30 Seawater Reverse Osmosis Membrane - Element Test Results", FilmTec Corporation. Desalination, 38 (1981) 473-483
AF	*		Handbook of Membrane Technology, pp. 26-28, July 15, 1983
AF	*		Dyke, F.T., et al, "Removal of Salt, Oil, and Boron From Oil Field Wastewater By High pH Reverse Osmosis Processing", September, 1992

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AF	*		Tao, F.T., et al, Conversion of Oilfield Produced Water Into An Irrigation/Drinking Quality Water, March, 1993
AF	*		Aronovitch, H. et al, "Weakly Acidic Cation Performance Treating Water Containing High Iron" May/June 1995
AF	*		Auerswald, D., "Optimizing the Performance of Reverse Osmosis/Continuous Electrodeionization System" May/June, 1996

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